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Fig.1

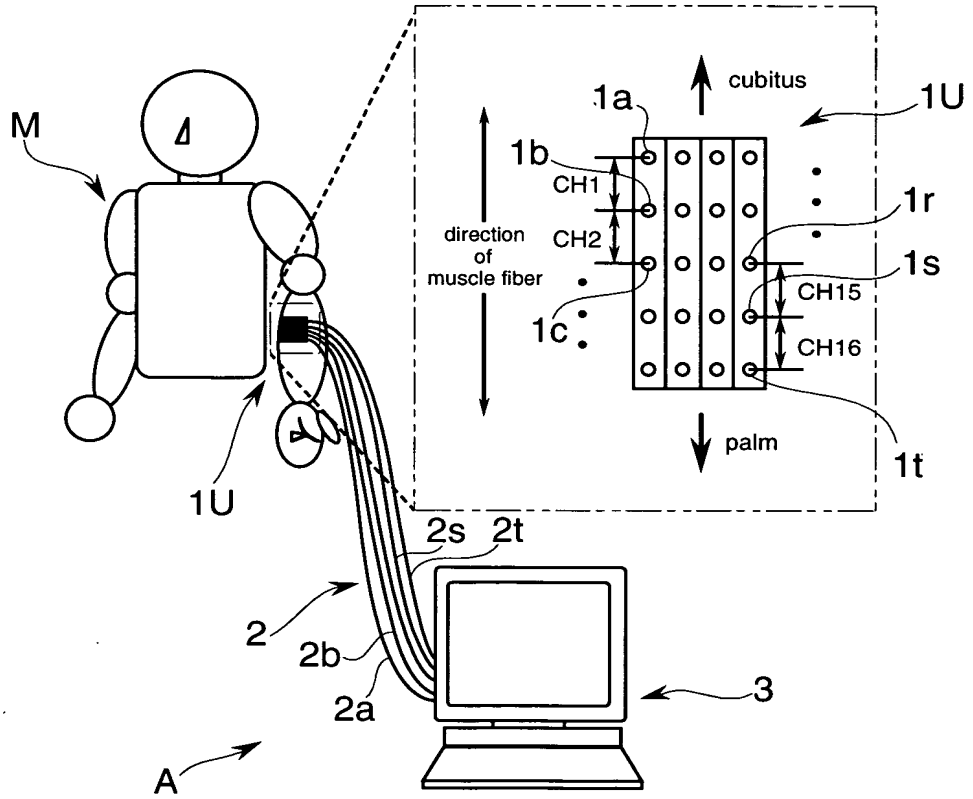


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Fig.2

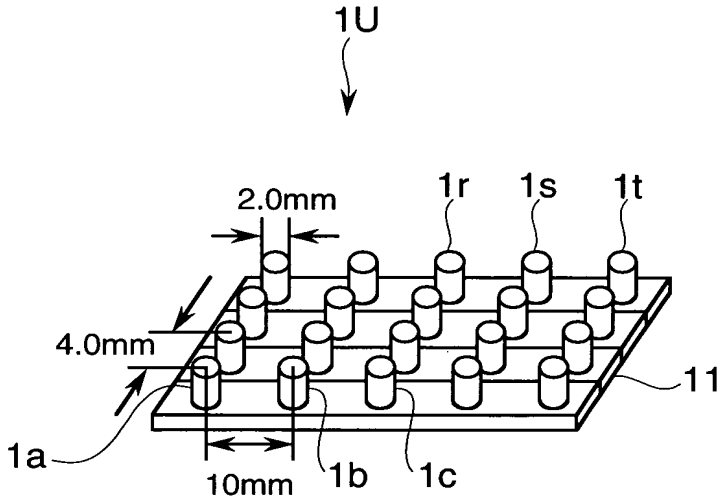


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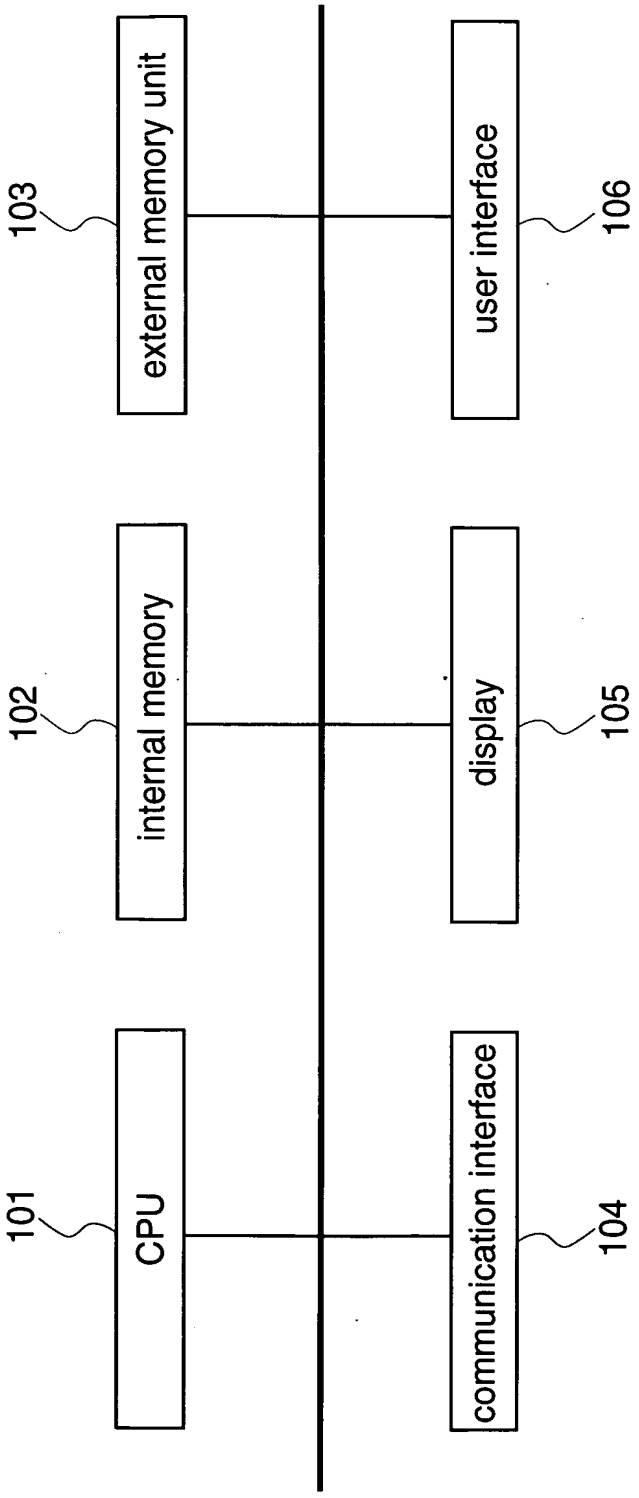
Fig.3



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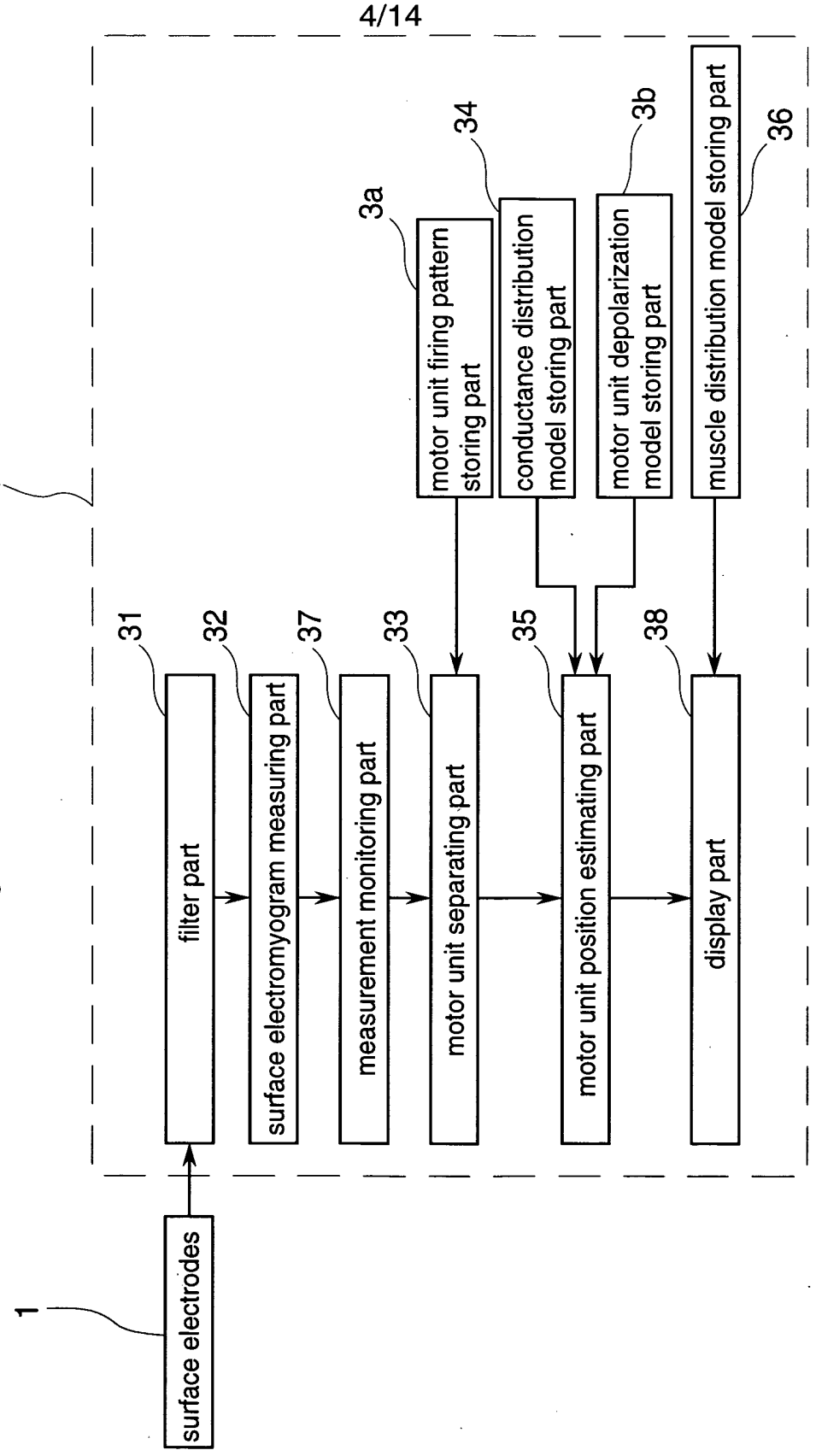


Fig.4

Fig.5

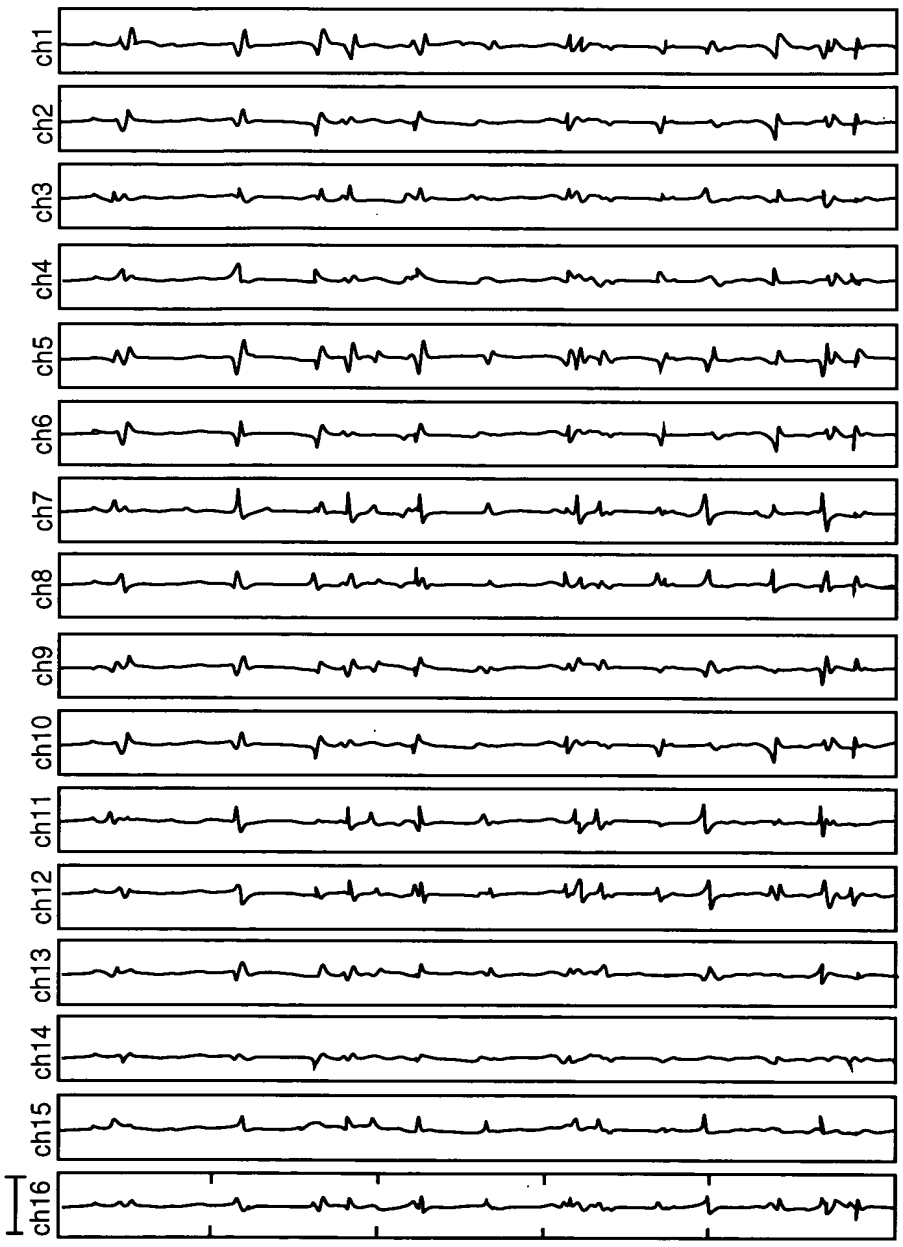
ch1
ch2
ch3
ch4
ch5
ch6
ch7
ch8
ch9
ch10
ch11
ch12
ch13
ch14
ch15
ch16

Fig.6

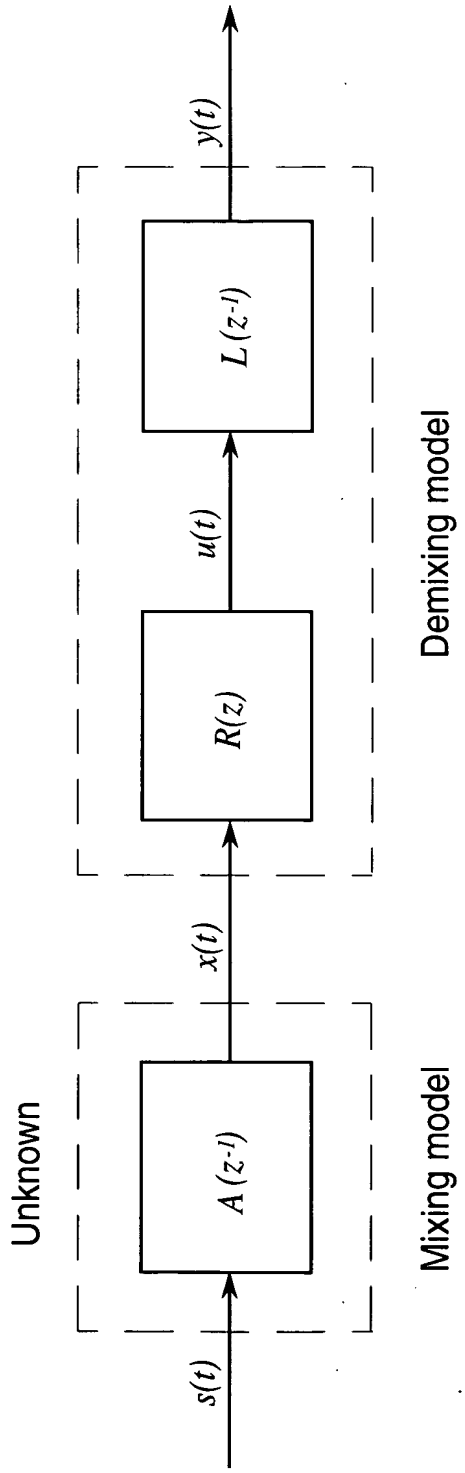

Fig.7

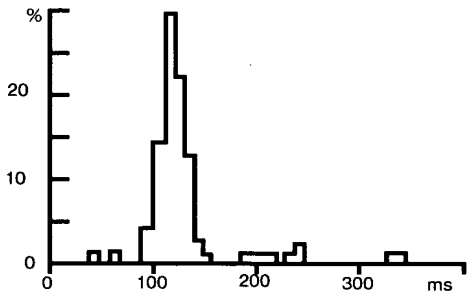

Fig.8

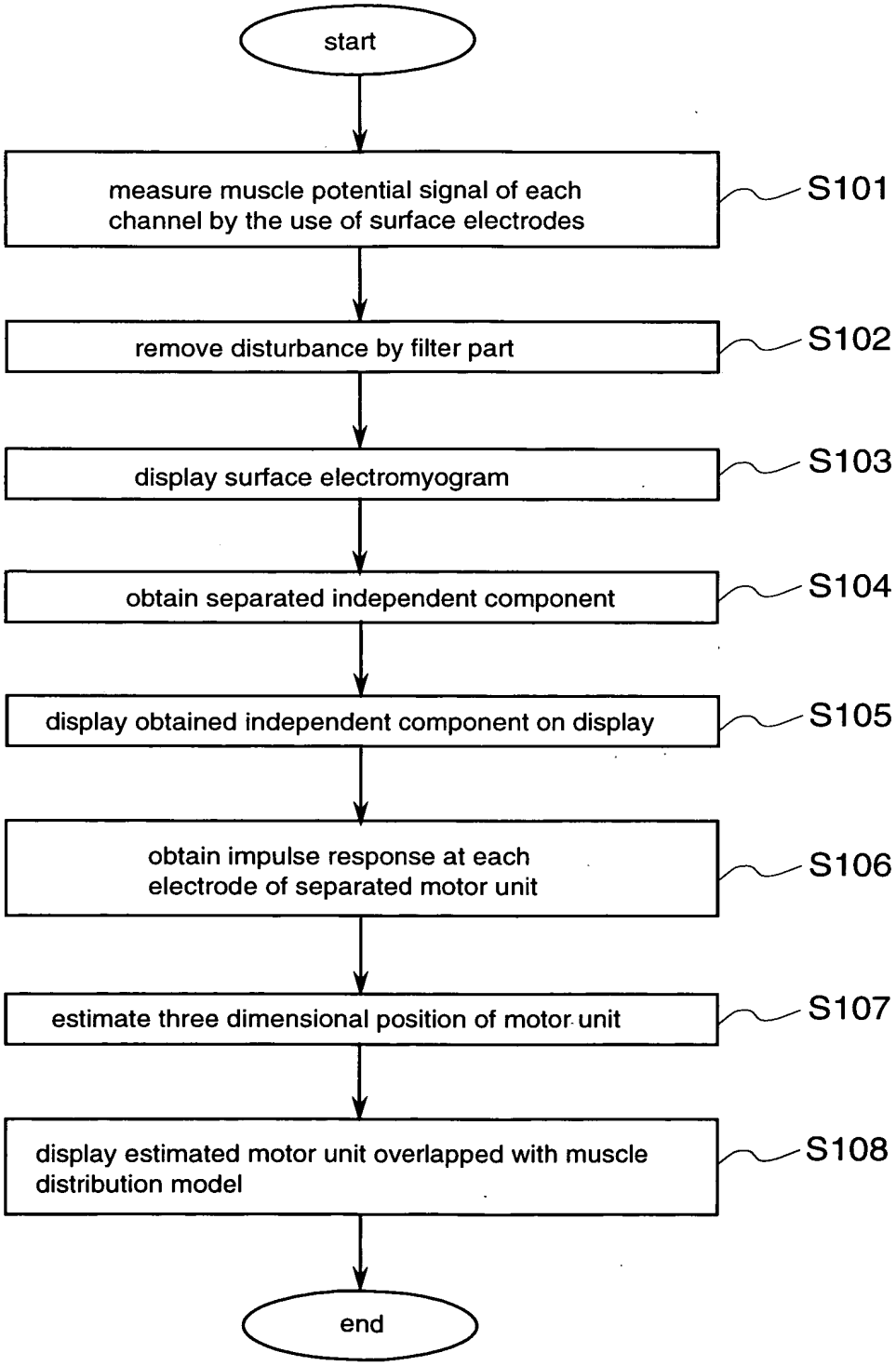
start
measure muscle potential signal of each channel by the use of surface electrodes
S101
remove disturbance by filter part
S102
display surface electromyogram
S103
obtain separated independent component
S104
display obtained independent component on display
S105
obtain impulse response at each electrode of separated motor unit
S106
estimate three dimensional position of motor unit
S107
display estimated motor unit overlapped with muscle distribution model
S108
end

Fig.9

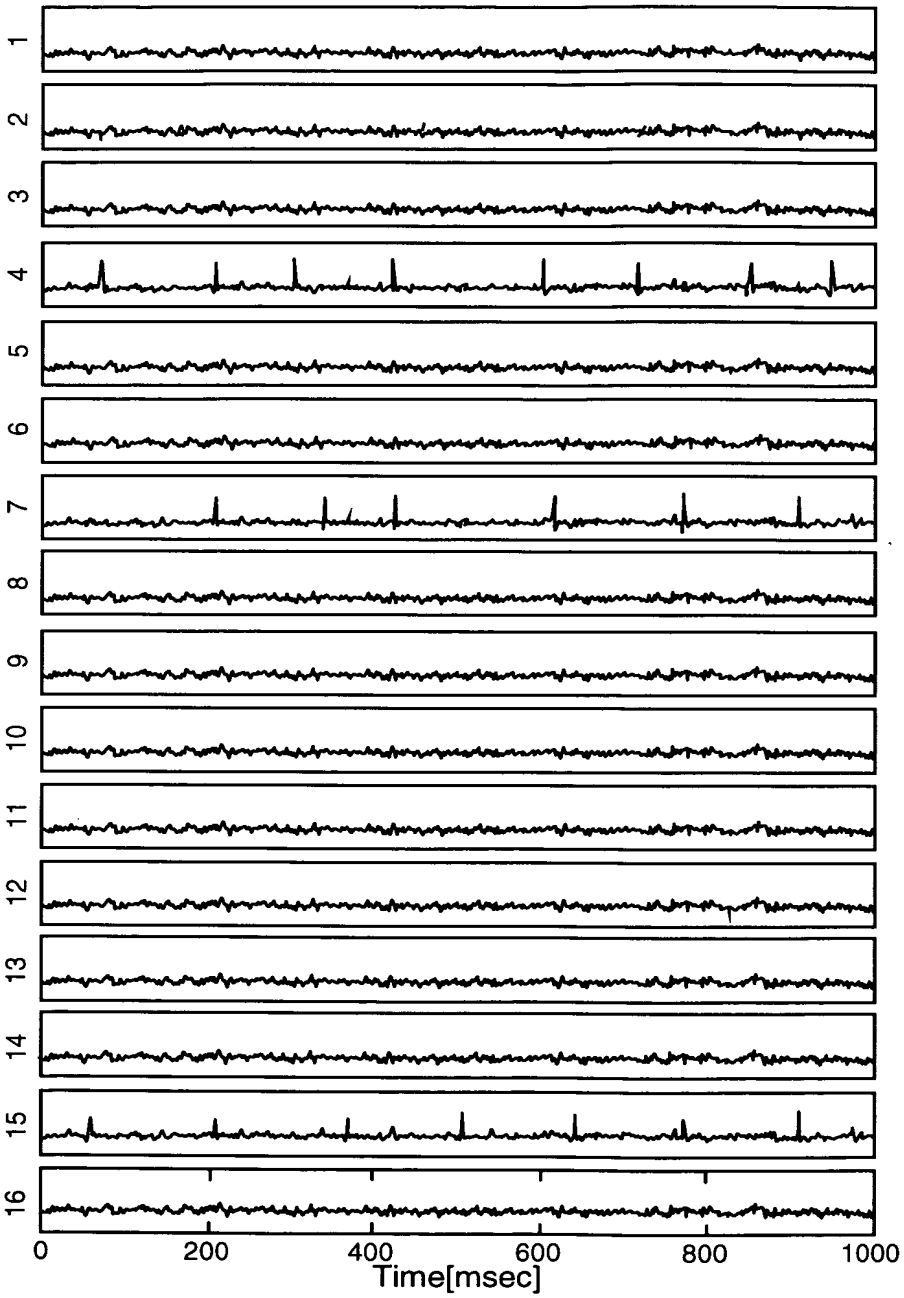


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Fig.10

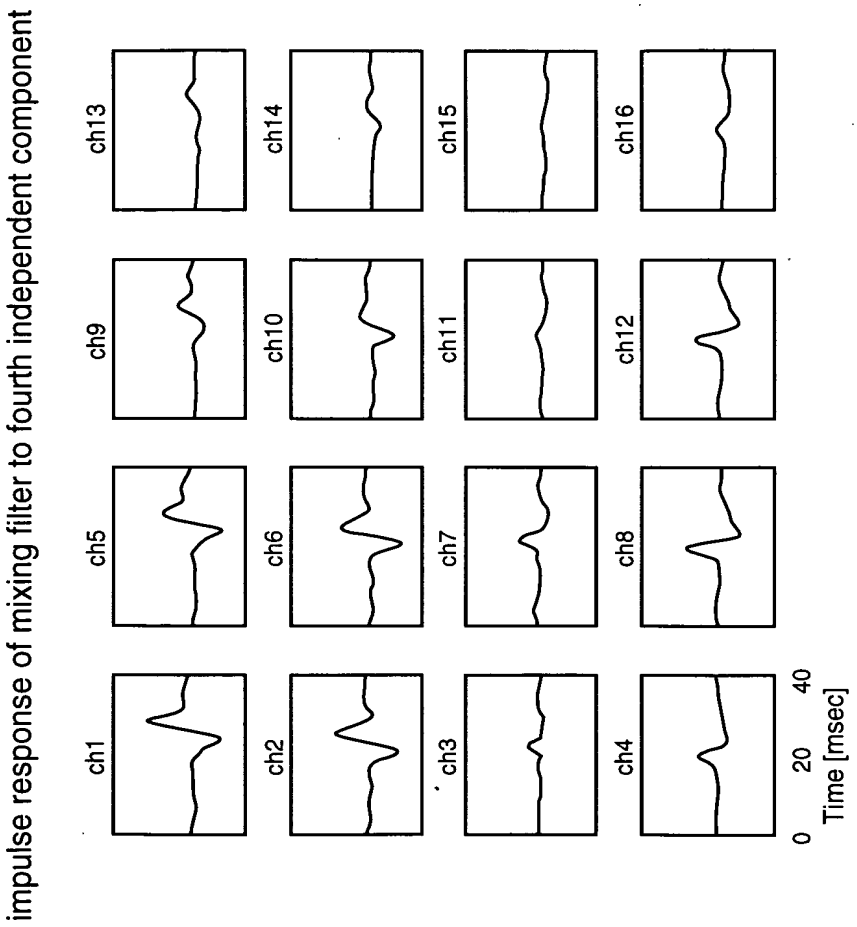
impulse response of mixing filter to fourth independent component
ch1
ch2
ch3
ch4
ch5
ch6
ch7
ch8
ch9
ch10
ch11
ch12
ch13
ch14
ch15
ch16
0
20
40
Time [msec]

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Fig.11

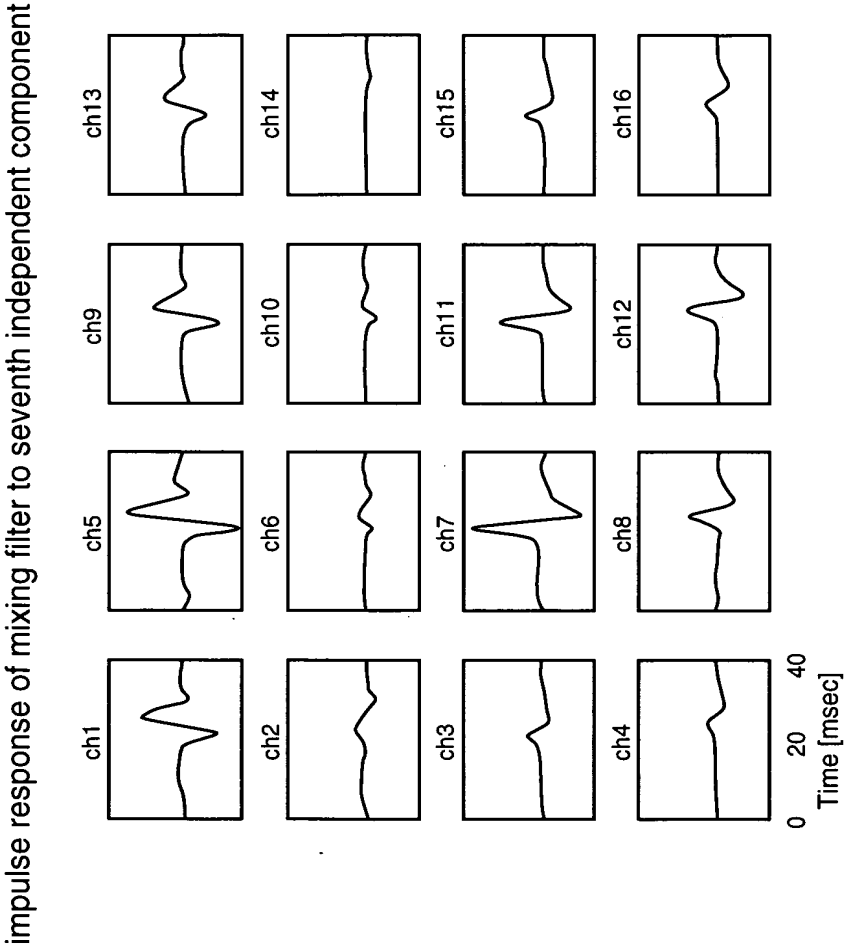


Fig.12

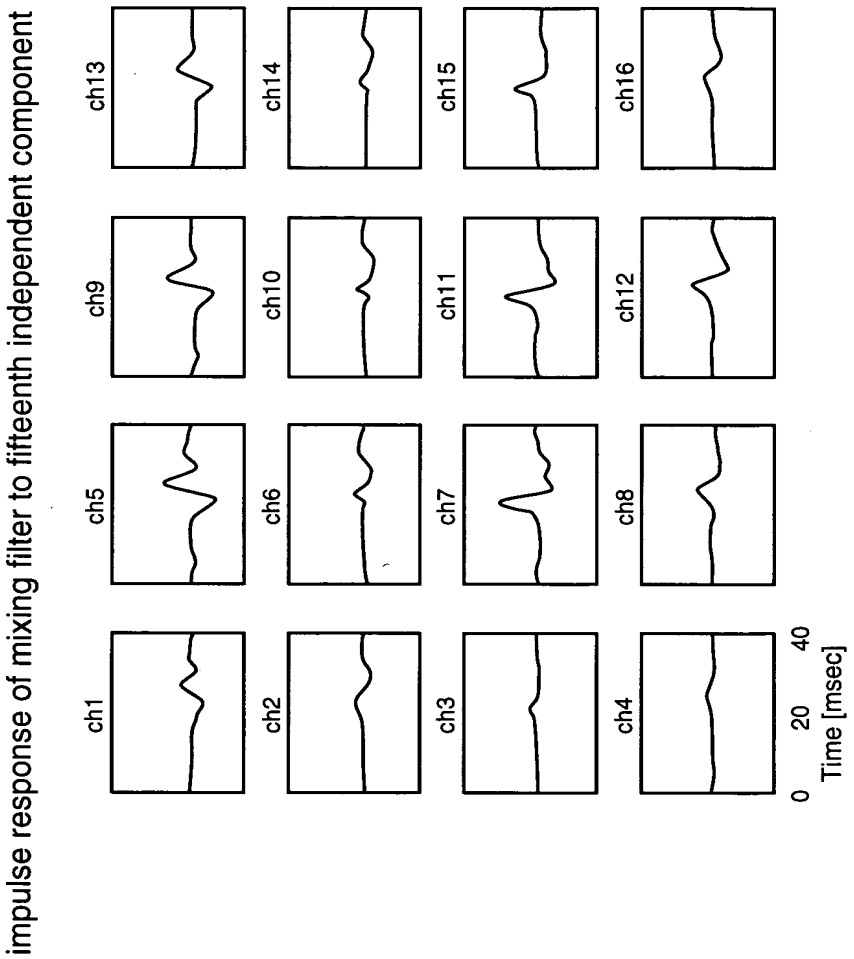
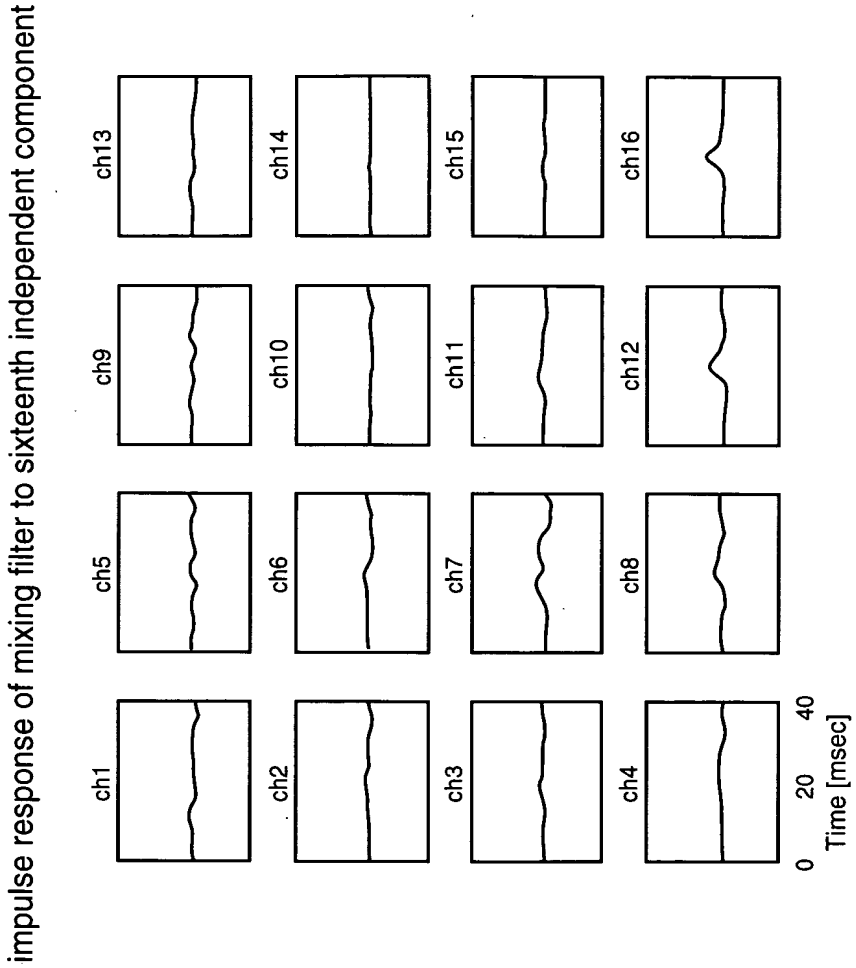

impulse response of mixing filter to fifteenth independent component
ch1
ch2
ch3
ch4
ch5
ch6
ch7
ch8
ch9
ch10
ch11
ch12
ch13
ch14
ch15
ch16
0
20
40
Time [msec]

Fig.13


impulse response of mixing filter to sixteenth independent component
ch1
ch2
ch3
ch4
ch5
ch6
ch7
ch8
ch9
ch10
ch11
ch12
ch13
ch14
ch15
ch16
0
20
40
Time [msec]

10/527087



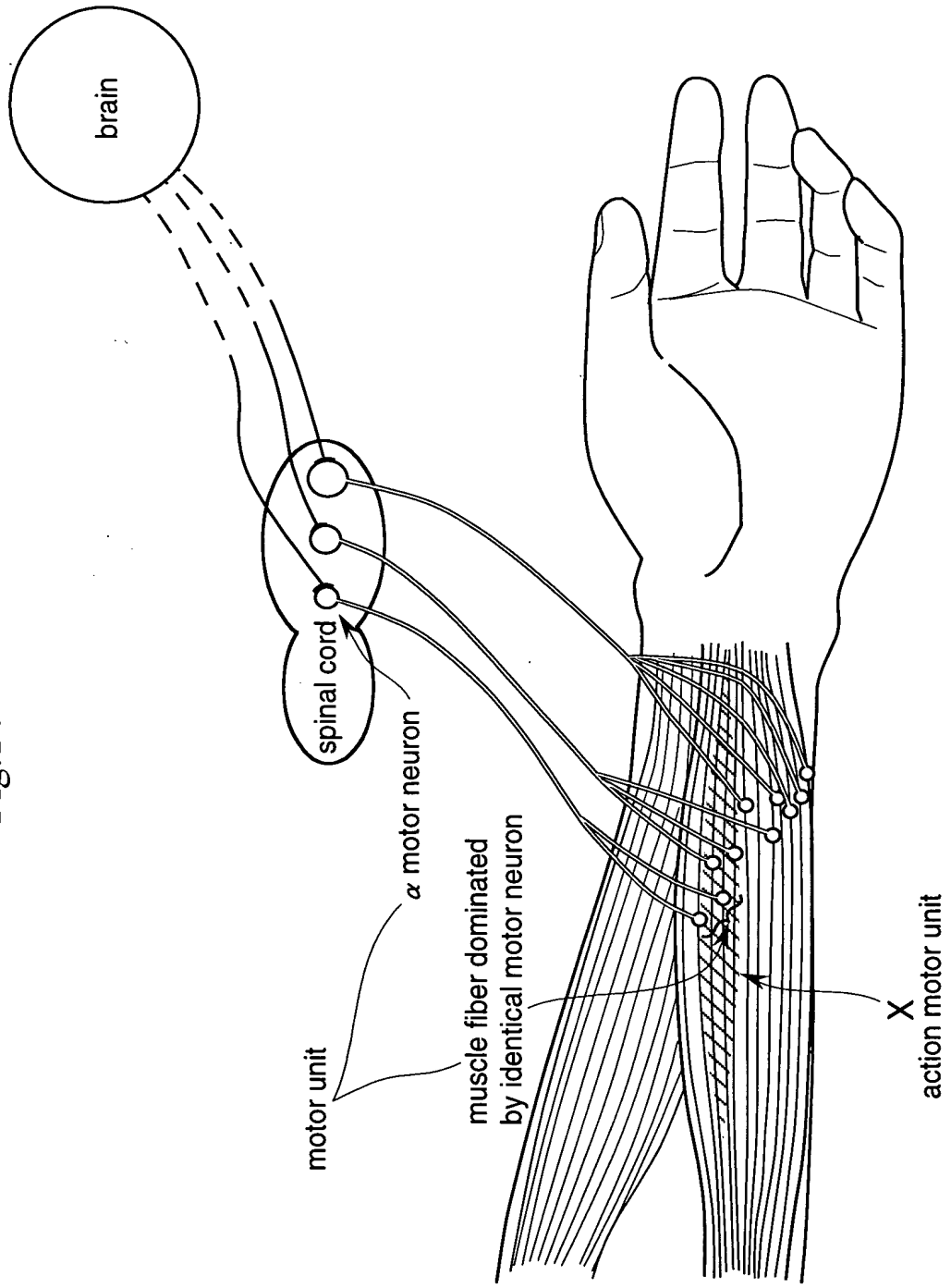



Fig.14

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